

01

The (2) independent claims (i.e., Claim 1 and Claim 4) of Japanese Kokai 2002-11014

Title: Tool to collect resected pieces and method to collected resected pieces.

[Claim 1] A tool to collect resected pieces characterized by its structure of being provided with:

a sack main body that is a series of multiple container parts formed with an opening on one side in which to insert resected pieces;
an introduction part provided in the opening edge of this sack main body;
and an opening and closing manipulation member inserted in this introduction part to open and close the aforementioned respective container parts.

[Claim 4] A method to collect resected pieces whereby retention forceps derive from the treatment tool introduction channel of the endoscope and retain bodily tissue; in addition to retaining bodily tissue, the bodily tissue is cut away with a high frequency cutting tool, and cutaway pieces retained by the aforementioned retaining forceps are collected using a cutaway piece collection tool, and being characterized in that multiple storage sections to individually house multiple cutaway pieces are formed in the aforementioned cutaway piece storage tool and, with the openings provided in these respective storage parts in an open state, the cutaway pieces retained by the aforementioned retaining forceps are introduced into respectively different storage sections; after the aforementioned cutaway pieces have been stored in the aforementioned respective storage spaces, the aforementioned openings are sealed closed and are taken out along with the aforementioned endoscope.

RESECTED TISSUE COLLECTING TOOL AND COLLECTING METHOD OF THE SAME

Patent Number: JP2002011014
Publication date: 2002-01-15
Inventor(s): ITOI HIROTOMO
Applicant(s): FUJI PHOTO OPTICAL CO LTD
Requested Patent: JP2002011014
Application Number: JP20000195588 20000629
Priority Number(s):
IPC Classification: A61B17/22; A61B17/00; A61B18/12
EC Classification:
Equivalents:

Abstract

PROBLEM TO BE SOLVED: To enable a resected tissue collecting tool to collect several pieces of resected tissues separately, when tissue like polyp is resected at somatic cavity, in the state that an insertion part of an endoscope is inserted in somatic cavity, and to effectively collect tissues by preventing tissue and blood contained in tissue from adhering to another part of somatic body.

SOLUTION: A sack main body 11 of the resected tissue collection tool 10 is separated in a plurality of container parts 12 independent with each other, and the resected tissue can be housed in each container part 12 from an introduction part 11a which is capable of opening and closing, and in order to keep the introduction part 11a in closed state, a tunnel-shaped insertion parts 13a, 13b are formed by turning up end parts of the sack main body 11 and adhering it to its side, and a drawstring 14 as an opening and closing member is inserted inside the insertion parts 13a, 13b.

Data supplied from the esp@cenet database - I2

(19)日本国特許庁 (JP)

(12) 公開特許公報 (A)

(11)特許出願公開番号

特開2002-11014

(P2002-11014A)

(43)公開日 平成14年1月15日 (2002.1.15)

(51)IntCL'

A 61 B 17/22
17/00
18/12

識別記号

3 2 0

F I

A 61 B 17/22
17/00
17/39

データコード(参考)

4 C 0 6 0
3 2 0
3 1 0

審査請求 未請求 請求項の数4 OL (全8頁)

(21)出願番号

特願2000-195588(P2000-195588)

(22)出願日

平成12年6月29日 (2000.6.29)

(71)出願人 000005430

富士写真光機株式会社
埼玉県さいたま市植竹町1丁目324番地

(72)発明者 糸井 啓友

埼玉県大宮市植竹町1丁目324番地 富士
写真光機株式会社内

(74)代理人 100089749

弁理士 影井 俊次

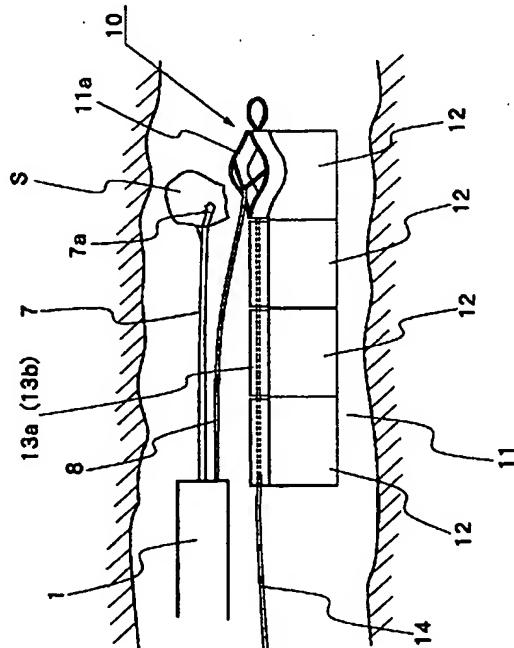
Fターム(参考) 40060 GG19 GG22 GG36 KK03 MM26

(54)【発明の名称】 切除片回収具及び切除片回収方法

(57)【要約】

【課題】 体腔内において、ポリープ等の体内組織を切除するに当って、内視鏡の挿入部を体内に挿入したまま、複数の切除片をそれぞれ分離した状態で回収でき、かつ体外に取り出す際に、この体内組織及びそれに含まれる血液等が体腔内の他の箇所に付着しないようにして有効に回収できるようにする。

【解決手段】 切除片回収具10の袋本体11はそれぞれ独立した複数の区画収容部12に区画形成され、各区画収容部12に導入部11aから切除片を導入できるようになっており、この導入部11aは閉鎖可能なものであり、この導入部11aを閉鎖状態にできるようにするために、袋本体11の端部を折り返した上で、その端部を袋本体11の側面に固定することによりトンネル状の挿通部13a, 13bが形成されて、これら挿通部13a, 13b内には開閉操作部材としての操作紐14が挿通されている。



【特許請求の範囲】

【請求項1】 一側に切除片を挿入するための開口を形成した複数の収容区画部を複数連設した袋本体と、この袋本体の開口縁部に設けた挿通部と、この挿通部に挿通されて、前記各収容区画部を開閉する開閉操作部材とを備える構成としたことを特徴とする切除片回収具。

【請求項2】 前記挿通部はループ状となし、この挿通部に挿通される開閉操作部材は操作紐で構成し、この操作紐を前記挿通部に挿通させると共に、この操作紐の一端にはクリップを設けて、このクリップは操作紐を摺動可能に係止する構成としたことを特徴とする請求項1記載の切除片回収具。

【請求項3】 前記挿通部には、前記各収容区画部の位置にそれぞれ一対からなる湾曲形状に曲げ癖を付けた弾性部材を装着すると共に、前記開閉操作部材は、この弾性部材の曲げ方向を変化させるもので構成したことを特徴とする請求項1記載の切除片回収具。

【請求項4】 内視鏡の処置具挿通チャンネルから把持鉗子を導出させて、体内組織を持持すると共に、高周波切除具により、この体内組織を切除して、前記把持鉗子により把持された切除片を切除片回収具を用いて回収するための方法であって、

前記切除片回収具には、複数の切除片をそれぞれ個別に収容させる複数の収容区画部を形成して、これら各収容区画部に設けた開口部を開いた状態で、前記把持鉗子により把持されている切除片を各々異なる収容区画部に挿入し、

前記切除片を前記各収容区画部に収容させた後に前記開口部を閉鎖して、前記内視鏡と共に取り出すことを特徴とする切除片回収方法。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は、体腔内等において、ポリープ等を切除して体外に回収するための切除片回収具に関するものである。

【0002】

【従来の技術】 内視鏡検査により食道、直腸、大腸等の体腔管や、胃等の臓器、その他の体腔内壁に生じたポリープ等を検出した時には、それを切除する処置が行われる。このような処置を施すために、内視鏡には処置具挿通チャンネルが設けられ、この処置具挿通チャンネルには処置具を挿通できるようになっている。ここで、ポリープ等の体内組織を切除するには2種類の処置具が必要となる。即ち、切除すべき体内組織を把持して持ち上げるための把持鉗子と、この把持鉗子により持ち上げられた体内組織を所定の位置から切除するための高周波スネア、高周波ナイフ等の高周波処置具とである。これらの処置具は、通常、内視鏡に設けた処置具挿通チャンネルを介して体腔内に導かれるようになっている。しかも、

これら2種類の処置具は同時に体腔内に挿入できるようになっていなければならない。

【0003】 従って、前述した体内組織の切除等の処置を施せるようにした内視鏡の挿入部は、概略図10に示したように構成される。この図から明らかなように、挿入部1を構成する先端部本体1aの先端面に内視鏡観察機構として、体腔内に照明光を照射する照明部2と、この照明部2からの照明下で体腔内を観察する観察部3とを設けると共に、処置具を挿通させる第1、第2の処置具挿通チャンネル4、5を設けた、所謂2チャンネルタイプの内視鏡として構成される。この挿入部1を体腔内の所定の位置にまで導いて、照明窓2から照射される照明の下で、観察窓3から得られる体腔内の像を観察することにより体腔内を検査する。そして、この検査の結果、体腔内に切除が必要な体内組織、例えば図11に示したようなポリープPが存在することが検出された時には、それを切除して回収する処置が施される。

【0004】 この処置は、まず第1の処置具挿通チャンネル4から高周波処置具として、例えば高周波スネア6を挿入し、この高周波スネア6を挿入部1の先端から所定長さ導出させて、そのスネアワイヤ6aのループ内にポリープPを囲繞させる。次に、第2の処置具挿通チャンネル5に把持鉗子7を挿入して、この把持鉗子7の先端に設けた把持爪7aによりポリープPを持ち上げることによって、スネアワイヤ6aを切除すべき位置に配置する。この状態で、高周波スネア6のスリープ6b内にスネアワイヤ6aのループを引き込んで、切除すべき位置を絞扼し、その後にこのスネアワイヤ6aに高周波電流を流すことによって、その時に発生するジュール熱によりポリープPが根元から切除される。このようにして切除されたポリープPの切除片は体外に取り出されることになる。

【0005】

【発明が解決しようとする課題】 ところで、前述したように、ポリープ等の切除片を体外に取り出す操作は、把持鉗子7でポリープPを把持させたままで、あるいは高周波スネア6に代えて回収具を第1の処置具挿通チャンネル4から導出させて、この回収具に保持させるようにして、挿入部1を体腔内から引き出すようにするのが一般的である。しかしながら、このような切除片の回収方式は、以下に示すような問題点が生じることになる。

【0006】 まず、切除したポリープPが回収される間に、体腔内壁と接触しないようにする必要があり、このために挿入部1を体腔内から引き出す操作が非常に面倒になる。また、把持鉗子7はポリープを1個しか把持できないことから、体腔内壁に複数のポリープPが存在する場合には、挿入部1を切除の都度体腔内に挿脱しなければならず、例えば大腸内等のように、体腔内の深部におけるポリープPの切除処理を行う場合等においては、長時間の処置が必要であり、患者にかかる負担も大きく

なる等の不都合が生じる。

【0007】本発明は以上の点に鑑みてなされたものであって、その目的とするところは、体腔内において、ボリープ等の体内組織を切除するに当って、内視鏡の挿入部を体内に挿入したままで、複数の切除片をそれぞれ分離した状態で回収でき、かつ体外に取り出す際に、この体内組織及びそれに含まれる血液等が体腔内の他の箇所に付着しないようにして有効に回収できるようにすることにある。

【0008】

【課題を解決するための手段】前述した目的を達成するために、本発明の切除片回収具の構成としては、一側に切除片を挿入するための開口を形成した複数の収容区画部を複数連設した袋本体と、この袋本体の開口縁部に設けた挿通部と、この挿通部に挿通されて、前記各収容区画部を開閉する開閉操作部材とを備える構成としたことをその特徴とするものである。

【0009】ここで、袋本体は、例えば軟性の合成樹脂のシートから構成することができ、挿通部はその開口端近傍を折り返して、端部を止着することにより形成できる。この挿通部に挿通される開閉操作部材としては、操作紐、ワイヤ、弾性帶片等で構成される。この開閉操作部材による各収容区画部の開閉は、鉗子等を開閉具として用いることもできるが、開放する状態または閉鎖する状態に保持しておき、外力を作用することによって、開放状態から閉鎖状態に、また閉鎖状態から開放状態に変位させることができる。

【0010】例えば、挿通部をループ状とし、この挿通部に挿通される開閉操作部材を操作紐で構成して、この操作紐を挿通部に挿通させると共に、この操作紐の一端にはクリップを設けて、このクリップは操作紐を摺動可能に係止する構成とすれば、鉗子等により各収容区画部を強制的に開いて、切除した体内組織を収容区画部に収容させることができ、操作紐の一端を引っ張るよう

操作すれば、操作紐が手縄り寄せられて全ての収容区画部の開口部が絞られるようにして閉鎖される。また、挿通部には、前記各収容区画部の位置に湾曲形状に曲げ癖を付けた弾性部材を装着すると共に、開閉操作部材によりこの弾性部材を弾性変形させることによって、収容区画部を開閉させるように構成することもできる。

【0011】また、本発明の切除片回収方法は、内視鏡の処置具挿通チャンネルから把持鉗子を導出させて、体内組織を把持すると共に、高周波切除具により、この体内組織を切除して、前記把持鉗子により把持された切除片を切除片回収具を用いて回収するための方法であつて、前記切除片回収具には、複数の切除片をそれぞれ個別に収容させる複数の収容区画部を形成して、これら各収容区画部に設けた開口部を開いた状態で、前記把持鉗子により把持されている切除片を各々異なる収容区画部に挿入し、前記切除片を前記各収容区画部に収容させ

た後に前記開口部を閉鎖して、前記内視鏡と共に取り出すことをその特徴とするものである。

【0012】

【発明の実施の形態】以下、図面に基づいて本発明の実施の形態について説明する。なお、体内組織の切除を行うために用いられる内視鏡の挿入部は図10に示したように2チャンネルタイプの挿入部1を有する内視鏡が用いられ、また体内組織を切除する処置は、図11に示した高周波スネア6と、把持鉗子7とが用いられ、かつ切除を行う操作についても前述した従来技術の方式と同じである。そして、本発明においては、切除された体内組織、つまり切除片の回収を行うのに、図1に示した切除片回収具を用いるようにしている。

【0013】而して、図1において、切除片回収具10は軟性の合成樹脂シート等で構成した袋本体11を有し、この袋本体11は複数の区画収容部12に区画形成されている。各区画収容部12間には仕切り部が形成されて、それぞれ完全に独立している。そして、袋本体11の一側はその全長に及ぶように導入部11aが開口しており、各区画収容部12にはこの導入部11aから切除片を導入できるようになっている。導入部11aは開閉可能なものであり、この導入部11aを閉鎖状態にできるようにするために、袋本体11の端部を折り返した上で、その端部を袋本体11の側面に固着することによりトンネル状の挿通部13a, 13bが形成されている。そして、これら挿通部13a, 13b内には開閉操作部材としての操作紐14が挿通されている。

【0014】ここで、挿通部13a, 13bは袋本体11の開口縁部の左右両側に形成されており、少なくともこの袋本体11の長手方向における基端側ではそれぞれ開口している。また、両側の挿通部13a, 13bの先端側を連通させて、往復する一連の通路を形成するようにも良いが、本実施の形態においては、先端側も開口させている。さらに、図1には、挿通部13a, 13bは各区画収容部12毎に分割されているように示したが、これら挿通部13a, 13bは一連の通路として構成することもできる。従って、操作紐14は一側の挿通部13aに挿通させて、一度外部に導出させた後に、他側の挿通部13bに挿通されてループ状となるように装着される。そして、挿通部13a, 13bの基端側において、操作紐14の一端は挿通部13aの基端部に固定された固定端となっており、また他端側は自由状態となって、挿通部13bから所定の長さ導出されている。また、操作紐14における挿通部13a, 13bの先端側からの導出部分は所定の長さだけ導出させた上で折り返されており、この導出長さ分は各区画収容部12の開口部を開くための余長となる。

【0015】以上の構成を有する切除片回収具10は、図2に示したように、操作紐14の挿通部を芯として、処置具挿通チャンネルより細い巻き径となるように巻き

込むことができる。そして、このようにして巻き込んだ切除片回収具10は、図10に示した内視鏡の挿入部1において、例えば第2の処置具挿通チャンネル5の内部に押し込むように装着される。このように切除片回収具10を組み込んだ挿入部1を体腔内における所定の位置にまで挿入して、体腔内の内視鏡検査が行われる。その結果、ボリープPその他、切除すべき体内組織の存在が検出されると、この体内組織を切除して回収する操作を行う。

【0016】このためには、第2の処置具挿通チャンネル5内に挿入されている切除片回収具10を押し出すようにして、この第2の処置具挿通チャンネル5から体腔の内部に取り出す。この操作は、例えばこの第2の処置具挿通チャンネル5内に先端部分が膨出した処置具等、好ましくは図11に示した把持鉗子7を挿入することにより行うことができる。また、この鉗子を第2の処置具挿通チャンネル5から導出させることにより、巻き込まれた状態となっている切除片回収具10を押し広げる。

【0017】図11と同様の操作によって、ボリープ等、切除すべき体内組織に対する切除が行われ、把持鉗子7により体内組織を把持して高周波スネア6の作用で切除した体内組織の切除片は把持鉗子7に把持された状態に保たれる。この状態で、図3に示したように、高周波スネア6を一度回収して、第1の処置具挿通チャンネル4から切除片回収具10を構成する区画収容部12に設けた導入部11aを開くための開放用操作部材として、例えば把持爪がほぼ180°にまで開くようになった鉗子8を挿入して、それを第1の処置具挿通チャンネル4から導出させる。そして、この鉗子8により切除片回収具10の袋本体11に形成したいずれかの区画収容部12の内部を開放して、把持鉗子7に把持されている切除片Sをこの区画収容部12の内部に挿入する。ここで、最初に収容させる区画収容部12は、最先端に位置するものであるのが望ましい。つまり、区画収容部12の導入部11aを開く際には、挿通部13に挿通させた操作紐14に引っ張り力が作用することになるが、この操作紐14には、この最先端の区画収容部12より前方にループ状の余長が設けられているので、導入部11aを開く際に、この余長分が円滑かつ確実に手縛り寄せられる。

【0018】以上のようにして1回の体内組織の切除が完了した後に、鉗子8により最先端の区画収容部12から2番目の収容区画部12を開くように操作する。これによって、最先端の区画収容部12から操作紐14が手縛り寄せられて、最先端の区画収容部12がほぼ閉鎖状態になると共に、この2番目の収容区画部12が開かれる。そこで、鉗子8を第1の処置具挿通チャンネル4から取り出して、再び高周波スネア6を第1の処置具挿通チャンネル4から導出させれば、そのままで新たな体内組織の切除を行うことができ、かつ前述と同様の操作を

行うことによって、他の区画収容部12に切除した体内組織を収容させることができる。このようにして、切除片回収具10において、複数設けた区画収容部12には、先端から順次切除片Sが挿入され、全ての区画収容部12内に切除片Sが収容されるまで、内視鏡の挿入部1を体腔内に配置したままで繰り返し体内組織の切除及びその切除片Sの各区画収容部12への収容を行うことができる。

【0019】切除片回収具10を構成する全ての区画収容部12内に切除片Sが収容されると、この切除片回収具10を体内から取り出す。このためには、まず各区画収容部12の導入部11aを完全に閉鎖しなければならない。導入部11aが開放された状態または操作紐14が緩んだ状態で切除片回収具10を取り出すと、区画収容部12の内容物が導入部11aから溢出するおそれがあるからである。このために、鉗子8を用いて、操作紐14の自由端を第2の処置具挿通チャンネル4内に引き込むように操作する。その結果、切除片回収具10は第2の処置具挿通チャンネル4内に引き込まれようとする。ただし、この切除片回収具10は第2の処置具挿通チャンネル4の内径より十分大きいものであり、従ってこの第2の処置具挿通チャンネル4の開口端部分に引っ掛かって、内部に引き込まれない。従って、操作紐14が引き絞られて、図4に示したように、袋本体11における導入部11aが縮小することになり、導入部11aが閉鎖されて、例えば止血クリップ15等により袋本体11の導入部11a全体が閉鎖された状態に保持できることになる。

【0020】そこで、鉗子8により操作紐14を把持させて、挿入部1を体腔内から引き抜くように操作することによって、切除片回収具10の各区画収容部12に収容された複数の切除片Sを同時に回収することができる。而して、各区画収容部12は閉鎖された状態になっているので、これら各区画収容部12の内容物である切除片S及びその血液等が漏れ出すのを確実に防止でき、健康な組織等に病変した組織等が付着するおそれはない。しかも、複数の切除片Sはそれぞれ独立した区画収容部12に収容されて、分離した状態で回収できることから、回収後に確実に切除箇所毎に分けて種々の検査等を行うことができる。また、1回の切除毎に挿入部1を体内に挿脱する必要がないので、円滑かつ迅速な体内組織の切除を行うことができ、患者の苦痛を大幅に軽減できる等、処置の効率化が図られる。

【0021】ところで、前述した実施の形態においては、切除片回収具10における各区画収容部12の導入部11aを開く操作を鉗子等の開放用操作部材を用いて行うことから、1回の切除毎に高周波切除具と開閉操作用の鉗子とを交換して挿入しなければならないが、切除片回収具10の開閉を遠隔操作により行うようにすれば、高周波切除具としての高周波スネア6の処置具挿通チャ

ンネルへの抜き差しを行う必要がなくなる。このためには、切除片回収具を図5乃至図9に示したように構成することができる。

【0022】まず、図5及び図6において、20は切除片回収具であり、この切除片回収具20を構成する袋本体21は、前述した第1の実施の形態における袋本体11と同様、複数の区画収容部22に区画形成されており、またこの袋本体21の一側は開口しており、これが切除片Sの導入部21aとなる。そして、袋本体21における導入部21aを形成した上端縁には左右両側に挿通部23a、23bが設けられている。そして、一方の挿通部23aには、それぞれ区画収容部22毎に分割したばね板24が固着して設けられている。このばね板24は、図7に示したように、湾曲形状となるように縫付けされており、常時においては、同図に実線で示した方向に湾曲するか、または仮想線で示した方向に湾曲するかの状態を保持するものである。そして、実線で示した状態に湾曲しているばね板24に対して矢印方向に外力を作用させると、一点鎖線で示した真直ぐな状態が死点位置となり、この死点位置を越えると、二点鎖線で示した状態になって安定する。挿通部23a、23bに挿通される開閉操作部材としては、挿通部23a側では各区画収容部22毎に相手方の挿通部23bから離間する方向に湾曲する湾曲部25aを有する固定側杆部材25となっている。これに対して、各区画収容部22毎にばね板24を装着されている側の挿通部23b内には、開閉操作用杆部材26が挿通されている。そして、この開閉操作用杆部材26には、その先端部分に1箇所湾曲部26aが形成されている。そして、固定側杆部材25は支持筒27に固定状態にして挿通されており、また開閉操作用杆部材26は、この支持筒27に対して押し引き及び軸回りに回動可能に挿通されている。

【0023】切除片回収具20を用いると、開閉操作用杆部材26を支持筒27に対して押し引き及び軸回りへの回動操作を行うことによって、この切除片回収具20を構成する各区画収容部22の導入部21aを開閉操作することができ、しかも開閉操作用杆部材26の基端部を操作することにより遠隔操作で各区画収容部22を開閉することができる。即ち、開閉操作用杆部材26の先端における湾曲部26aを挿通部23a側に挿通されている固定側杆部材25のいずれかの湾曲部25aと対面させて、湾曲部26aを湾曲部25aとは反対方向に湾曲させると、当該の区画収容部22の導入部21aが開いて、内部に切除片Sを挿入することができる。そして、切除片Sが収容された後に、開閉操作用杆部材26を180°回転させると、ばね板24が反対方向に湾曲することになる。そして、開閉操作用杆部材26を引き戻すように操作して、ばね板24を自由状態にすると、ばね板24は固定側杆部材25の湾曲部25aにほぼ接触する状態で安定する。さらに、図6において、27は

固定側杆部材25及び開閉操作用杆部材26を挿通させる支持筒であり、固定側杆部材25はこの支持筒27に対して固定されており、また開閉操作用杆部材26は支持筒27に対して軸回りに回転でき、かつ軸線方向に移動可能となっている。

【0024】従って、図8に示したように、開閉操作用杆部材26を袋本体21における最先端位置の区画収容部22に相当する位置でその湾曲部26aを固定側杆部材25のこの位置における湾曲部25aの湾曲方向とは反対方向に湾曲する状態に配置する。これによって、最先端位置の区画収容部22は大きく開口し、切除片Sを容易に挿入することができるようになる。切除片Sが収容された後に、開閉操作用杆部材26を180°回転させた後に、区画収容部22の1箇所の長さ分だけ引き戻して、さらに180°回転させることによって、図9に示したように、最先端の区画収容部22に設けたばね板24が固定側杆部材25における凹状に湾曲している湾曲部25a内に向けて凸状に突出するように湾曲して、この最先端の区画収容部22が閉鎖され、かつ先端から2番目の区画収容部22のばね板24は固定側杆部材25の湾曲部25aに対して反対方向に湾曲することにより、この2番目の区画収容部22が開かれることになる。さらに、開閉操作用杆部材26をもう一度180°回転させ、この2番目の区画収容部22を閉じた後に、それを1ピッチ分だけ引き戻すように操作することによって、袋本体21に設けた複数の区画収容部22の導入部21aを順次開閉させることができる。なお、これら図8及び図9においては、袋本体21の図示は省略され、区画収容部22を開閉操作するための手段のみが示されている。

【0025】ここで、導入部21aを閉鎖した時に、当該の区画収容部22をほぼ密閉状態にするには、ばね板24の曲率と、固定側杆部材25の湾曲部25aの曲率とをほぼ同じにすれば良い。また、開閉操作用杆部材26を1つの挿通部23bから引き戻す際に、ばね板24が大きく変形しないように安定させるために、その湾曲形状の最外側への露出部から先端側における長さを短くする。

【0026】この切除片回収具20を用いることによって、区画収容部22の導入部21aを開閉する手段を処置具挿通チャンネルに挿通させる必要がなくなる。従って、切除すべき体内組織を持持するための把持鉗子7を第2の処置具挿通チャンネル5から、またこの体内組織を切除する高周波スネア6を第1の処置具挿通チャンネル4からそれぞれ導出させたままで、次々に体内組織の切除を行い、その切除片Sを各区画収容部22内に挿入して回収することができる。その結果、体腔内に散在するポリープ等を迅速かつ効率的に切除する処置を行うことができ、術者及び患者の苦痛なり負担なりを著しく軽減できる。

【0027】

【発明の効果】本発明は以上のように構成したので、体腔内において、ポリープ等の体内組織を切除するに当って、内視鏡の挿入部を体内に挿入したままで、複数の切除片をそれぞれ分離した状態で回収でき、かつ体外に取り出す際に、この体内組織及びそれに含まれる血液等が体腔内の他の箇所に付着しないようにして有効に回収できる等の効果を奏する。

【図面の簡単な説明】

【図1】本発明の第1の実施の形態を示す切除片回収具の正面図である。

【図2】図1の切除片回収具を、その操作紐装着部を芯として巻き込んだ状態を示す外観図である。

【図3】第1の実施の形態で使用する切除片回収具に切除片を挿入している状態を示す作動説明図である。

【図4】切除片回収具の導入部を閉鎖した状態を示す作動説明図である。

【図5】本発明の第2の実施の形態を示す切除片回収具の正面図である。

【図6】図5の切除片回収具を構成する各部を分解して示す平面図である。

【図7】ばね板の作動状態を示す説明図である。

10

【図8】第2の実施の形態による切除片回収具の最先端の区画収容部における開口を開いた状態を示す作用説明図である。

【図9】図8の状態から最先端の区画収容部を閉鎖し、2番目の区画収容部の開口を開くように操作した状態を示す作用説明図である。

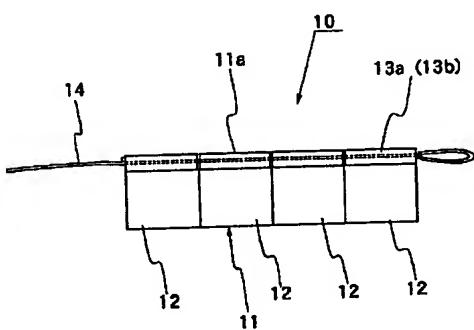
【図10】内視鏡の挿入部の先端部分を示す外観図である。

【図11】体内組織におけるポリープを切除している状態を示す作用説明図である。

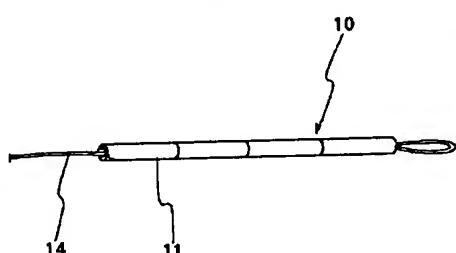
【符号の説明】

| | |
|------------------------|-----------------|
| 1 挿入部 | 4 第1の処置具挿通チャンネル |
| 5 第2の処置具挿通チャンネル | 6 高周波スネア |
| 7 把持鉗子 | 8 鉗子 |
| 10, 20 切除片回収具 | 11, 21 袋本体 |
| 11a, 21a 開口 | 12, 22 区画収容部 |
| 13a, 13b, 23a, 23b 挿通部 | 14 操作紐 |
| 15 クリップ | 24 ばね板 |
| 25 固定側杆部材 | 26 開閉操作用杆部材 |
| 25a, 26a 湾曲部 | |

【図1】



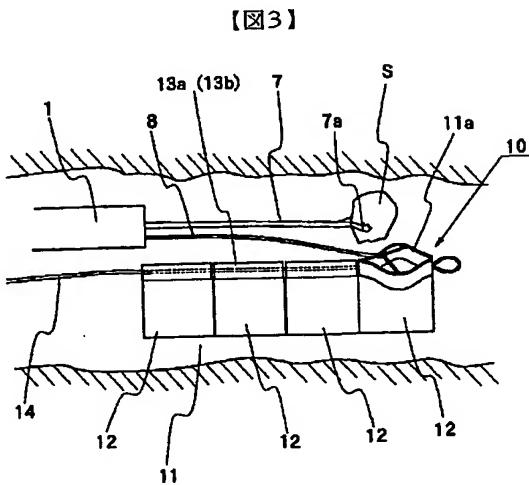
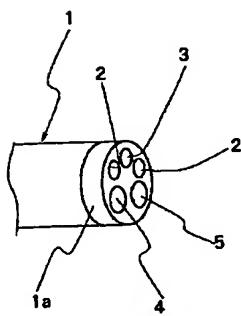
【図2】



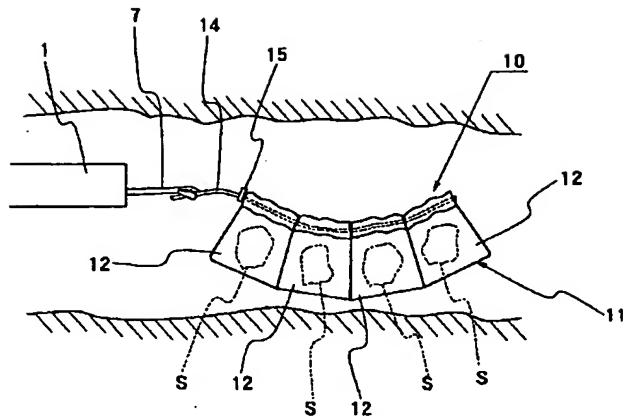
【図7】



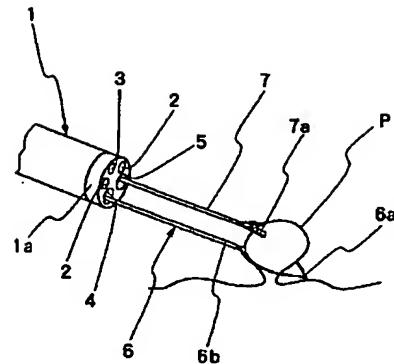
【図10】



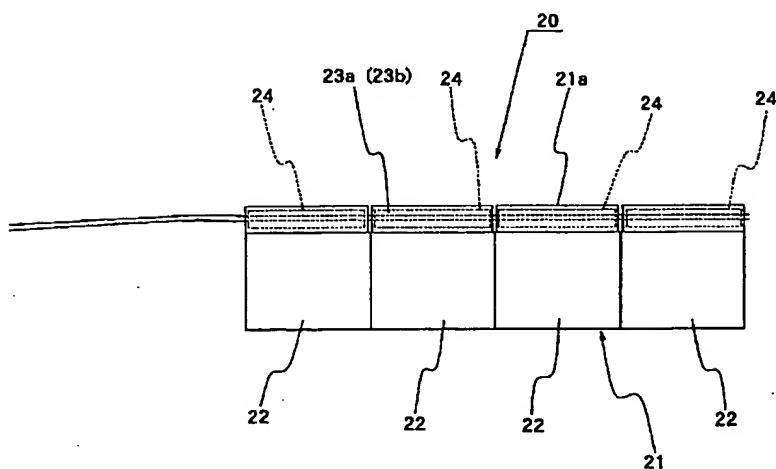
【図4】



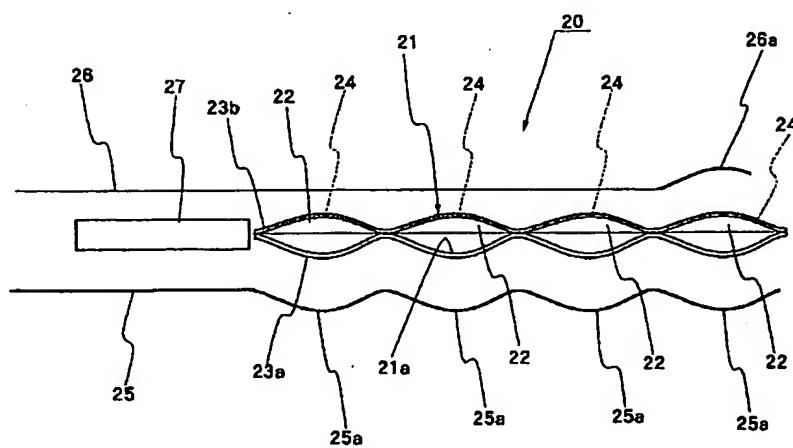
【図11】



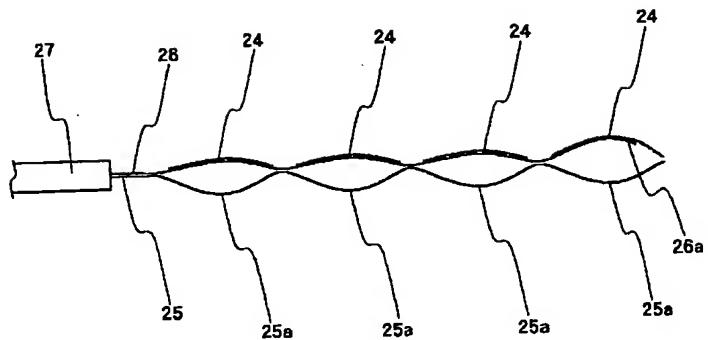
【図5】



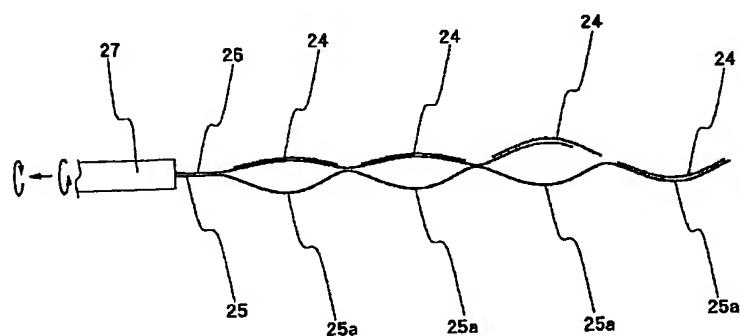
【図6】



【図8】



【図9】



CLAIMS

[Claim(s)]

[Claim 1] The piece recovery implement of excision characterized by considering as a configuration equipped with the insertion section which prepared two or more hold partition sections in which opening for inserting the piece of excision in 1 side was formed in the opening edge of the body of a bag formed successively, and this body of a bag, and the switching operation member which are inserted in this insertion section, and open and close said each hold partition section. [two or more]

[Claim 2] It is the piece recovery implement of excision according to claim 1 characterized by having formed the clip in this actuation string's end, and considering this clip as the configuration which stops an actuation string possible [sliding] while constituting the switching operation member by which said insertion section is inserted in the shape of a loop formation, nothing, and this insertion section from an actuation string and making this actuation string insert in said insertion section.

[Claim 3] It is the piece recovery implement of excision according to claim 1 characterized by for said switching operation member changing the direction of bending of this elastic member while equipping said insertion section with the elastic member which attached the bending peculiarity to the curve configuration which becomes the location of each of said hold partition section from a pair, respectively, and constituting.

[Claim 4] While making grasping forceps draw from the treatment implement insertion channel of an endoscope and grasping inside-of-the-body tissue It is an approach for a RF excision implement to recover the piece of excision which excised this inside-of-the-body tissue, and was grasped by said grasping forceps using the piece recovery implement of excision. To said piece recovery implement of excision Where opening which formed two or more hold partition sections in which two or more pieces of excision are made to hold individually, respectively, and was prepared in each [these] hold partition section is opened The piece recovery approach of excision characterized by inserting in the respectively different hold partition section the piece of excision currently grasped by said grasping forceps, closing said opening after making said piece of excision hold in said each hold partition section, and taking out with said endoscope.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the piece recovery implement of excision for excising a polyp etc. and collecting outside of the body [in a coelome etc.].

[0002]

[Description of the Prior Art] When the polyp produced by endoscopy in coelomoducts,

such as an esophagus, the rectum, and the large intestine, and organs, such as the stomach, and other coelome walls is detected, treatment which excises it is performed. In order to take such measures, a treatment implement insertion channel is prepared in an endoscope, and a treatment implement can be inserted in this treatment implement insertion channel. Here, two kinds of treatment implements are needed for excising inside-of-the-body tissues, such as a polyp. That is, it is with RF treatment implements, such as RF snare for excising from a position the inside-of-the-body tissue flattened by the grasping forceps and these grasping forceps for grasping and flattening the inside-of-the-body tissue which should excise, and a RF knife. These treatment implements are usually drawn in a coelome through the treatment implement insertion channel prepared in the endoscope. And these two kinds of treatment implements can be inserted now in coincidence into a coelome.

[0003] Therefore, the insertion section of an endoscope which enabled it to deal with excision of inside-of-the-body tissue mentioned above is constituted as shown in the schematic diagram 10. It is constituted as the so-called two channel type which formed the 1st and 2nd treatment implement insertion channel 4 and 5 in which a treatment implement is made to insert in the apical surface of point body 1a which constitutes the insertion section 1 while forming in the coelome the lighting section 2 which irradiates the illumination light, and the observation section 3 which observes the inside of a coelome under the lighting from this lighting section 2 as an endoscope observation device of an endoscope so that clearly from this drawing. This insertion section 1 is led even to the position in a coelome, and the inside of a coelome is inspected by observing the image in the coelome obtained from an observation port 3 under the lighting the image in the coelome obtained from an illumination window 2. And when it is detected that the polyp P as irradiated from an illumination window 2. And when it is detected that the polyp P as shown in the coelome at inside-of-the-body tissue, for example, drawing 11, to be excised exists as a result of this inspection, the measures which excise and collect them are taken.

[0004] This treatment inserts the RF snare 6 as a RF treatment implement from the 1st treatment implement insertion channel 4 first, carries out predetermined die-length derivation of this RF snare 6 from the tip of the insertion section 1, and makes Polyp P surround in the loop formation of that snare wire 6a. Next, it arranges in the location which should excise snare wire 6a by inserting the grasping forceps 7 in the 2nd treatment implement insertion channel 5, and raising Polyp P by grasping pawl 7a prepared at the tip of these grasping forceps 7. Polyp P is excised from a root by the Joule's heat then generated by drawing the loop formation of snare wire 6a in sleeve 6b of the high frequency snare 6, carrying out the strangulation of the location which should be excised, and passing the high frequency current to this snare wire 6a after that in this condition. Thus, the piece of excision of the excised polyp P will be taken out by the outside of the body.

[0005]

[Problem(s) to be Solved by the Invention] By the way, as mentioned above, as for the actuation which takes out pieces of excision, such as a polyp, outside of the body, it is common to pull out the insertion section 1 out of a coelome, as replace with the high frequency snare 6, a recovery implement is made to draw from the 1st treatment implement insertion channel 4 while Polyp P had been made to grasp with the grasping forceps 7 and it is made to hold to this recovery implement. However, a trouble as

shown below will produce such a recovery method of the piece of excision.

[0006] First, while the excised polyps P are collected, the actuation which it is necessary to make it not contact a coelome wall, for this reason pulls out the insertion section 1 out of a coelome becomes very troublesome. Moreover, since only one piece can grasp a polyp, when it must insert in a coelome at every excision of the insertion section 1 when two or more polyps P exist in a coelome wall, for example, performing excision processing of the polyp P in the deep part in a coelome like the inside of the large intestine, the grasping forceps P need prolonged treatment, and un-arranging -- the burden placed on a patient also becomes large -- produces them.

[0007] The place which this invention is made in view of the above point, and is made into the purpose Inserting the insertion section of an endoscope in the inside of the body in excising inside-of-the-body tissues, such as a polyp, in a coelome In case it can collect where two or more pieces of excision are separated, respectively, and it takes out outside of the body, it is in enabling it to collect effectively as the blood contained in this inside-of-the-body tissue and it does not adhere to other parts in a coelome.

[0008]

[Means for Solving the Problem] In order to attain the purpose mentioned above, as a configuration of the piece recovery implement of excision of this invention It is characterized [that] by considering as a configuration equipped with the insertion section which prepared two or more hold partition sections in which opening for inserting the piece of excision in 1 side was formed in the opening edge of the body of a bag formed successively, and this body of a bag, and the switching operation member which are inserted in this insertion section, and open and close said each hold partition section. [two or more]

[0009] Here, the body of a bag can be constituted from a sheet of the synthetic resin of elasticity, and the insertion section turns up near [the] the opening edge, and can form it by attaching an edge firmly. As a switching operation member inserted in this insertion section, it consists of an actuation string, a wire, a piece of an elastic band, etc.

Although closing motion of each hold partition section by this closing motion operating member can also use forceps etc. as a closing motion implement, the variation rate of it can be made to change into a closing condition into the open condition from a closing condition from an open condition again by holding in the condition or the condition of being closed down to open, and acting external force.

[0010] For example, while constituting the switching operation member inserted in the shape of a loop formation, nothing, and this insertion section in the insertion section from an actuation string and making this actuation string insert in the insertion section If a clip is formed in this actuation string's end and this clip is considered as the configuration which stops an actuation string possible [sliding] Forceps etc. can open each hold partition section compulsorily, and the inside-of-the-body tissue which excised can be made to hold in the hold partition section, and if it is operated so that an actuation string's end may be pulled, an actuation string will be drawn in, opening of all the hold partition sections will be extracted, and it will be made and closed down.

Moreover, in the insertion section, while equipping a curve configuration with the elastic member which attached the bending peculiarity in the location of each of said hold partition section, it can also constitute by carrying out elastic deformation of this elastic member by the closing motion operating member, so that the hold partition section may

be made to open and close.

[0011] Moreover, while the piece recovery approach of excision of this invention makes grasping forceps draw from the treatment implement insertion channel of an endoscope and grasps inside-of-the-body tissue It is an approach for a RF excision implement to recover the piece of excision which excised this inside-of-the-body tissue, and was grasped by said grasping forceps using the piece recovery implement of excision. To said piece recovery implement of excision Where opening which formed two or more hold partition sections in which two or more pieces of excision are made to hold individually, respectively, and was prepared in each [these] hold partition section is opened It is characterized [the] by inserting in the respectively different hold partition section the piece of excision currently grasped by said grasping forceps, closing said opening, after making said piece of excision hold in said each hold partition section, and taking out with said endoscope.

[0012]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained based on a drawing. In addition, it is the same as the method of the conventional technique mentioned above also about the actuation which the RF snare 6 which showed the treatment from which it excises to drawing 11 , and the grasping forceps 7 are used in inside-of-the-body tissue by using the endoscope which has the two-channel type insertion section 1 as shown in drawing 10 , as for the insertion section of the endoscope used in order to excise inside-of-the-body tissue, and excises. And although the excised inside-of-the-body tissue, i.e., recovery of the piece of excision, is performed, he is trying to use the piece recovery implement of excision shown in drawing 1 in this invention.

[0013] It **, and in drawing 1 , the piece recovery implement 10 of excision has the body 11 of a bag constituted from a synthetic-resin sheet of elasticity etc., and partition formation of this body 11 of a bag is carried out at two or more partition hold sections 12. It divided between each partition hold section 12, the section was formed, and it has been independent completely, respectively. And induction 11a is carrying out opening of the 1 side of the body 11 of a bag so that that overall length may be attained to, and it can introduce the piece of excision now into each partition hold section 12 from this induction 11a. In order to be able to open and close induction 11a and for this induction 11a to change into a closing condition, after turning up the edge of the body 11 of a bag, the tunnel-like insertion sections 13a and 13b are formed by fixing that edge on the side face of the body 11 of a bag. And in these insertion section 13a and 13b, the actuation string 14 as a switching operation member is inserted in.

[0014] Here, the insertion sections 13a and 13b are formed in the right-and-left both sides of the opening edge of the body 11 of a bag, and are carrying out opening, respectively in the end face side in the longitudinal direction of this body 11 of a bag at least. Moreover, the tip side of the insertion sections 13a and 13b of both sides is made to open for free passage, and although you may make it form a series of paths to which it goes and comes back, opening also of the tip side is carried out in the gestalt of this operation. Furthermore, although it indicated drawing 1 that the insertion sections 13a and 13b were divided every partition hold section 12, these insertion sections 13a and 13b can also be constituted as a series of paths. Therefore, after making it insert in insertion section 13a by the side of one and making it draw outside once, it is equipped

with the actuation string 14 so that it may be inserted in insertion section 13b of the side else and may become loop formation-like. And the actuation string's 14 end is the fixed end fixed by the end face section of insertion section 13a at the end face side of the insertion sections 13a and 13b, and an other end side is free, and die-length derivation of predetermined is carried out from insertion section 13b. Moreover, the derivation part from the tip side of the insertion sections 13a and 13b in the actuation string 14 is turned up after making only predetermined die length draw, and the amount of this derivation die length becomes the extra length for opening opening of the partition hold section 12.

[0015] As shown in drawing 2 , the piece recovery implement 10 of excision which has the above configuration can be involved in by using the actuation string's 14 insertion section as the heart so that it may become a thin diameter of a volume from a treatment implement insertion channel. And in the insertion section 1 of the endoscope shown in drawing 10 , it is equipped with the piece recovery implement 10 of excision which carried out in this way and was involved in so that it may push into the interior of the 2nd treatment implement insertion channel 5. Thus, the insertion section 1 incorporating the piece recovery implement 10 of excision is inserted even in the position in a coelome, and endoscopy in a coelome is conducted. Consequently, detection of existence of polyp P, others, and the inside-of-the-body tissue that should excise performs actuation of excising and collecting these inside-of-the-body tissues.

[0016] For that, as the piece recovery implement 10 of excision inserted into the 2nd treatment implement insertion channel 5 is extruded, it takes out from this 2nd treatment implement insertion channel 5 inside a coelome. This actuation can be performed by inserting the grasping forceps 7 preferably shown in drawing 11 , such as a treatment implement with which the amount of point bulged in this 2nd treatment implement insertion channel 5. Moreover, the piece recovery implement 10 of excision which is in the condition of having been involved in is extended by making these forceps draw from the 2nd treatment implement insertion channel 5.

[0017] The piece of excision of inside-of-the-body tissue which excision to the inside-of-the-body tissue which should excise was performed, and the polyp etc. grasped inside-of-the-body tissue with the grasping forceps 7, and was excised in the operation of the RF snare 6 by the same actuation as drawing 11 is maintained at the condition of having been grasped by the grasping forceps 7. The high frequency snare 6 is collected once, a grasping pawl inserts the forceps 8 which it came to open even at about 180 degrees as an operating member for disconnection for opening induction 11a prepared in the partition hold section 12 which constitutes the piece recovery implement 10 of excision from the 1st treatment implement insertion channel 4, and it is made to draw from the 1st treatment implement insertion channel 4 in this condition, as shown in drawing 3 . And the interior of one which was formed in the body 11 of a bag of the piece recovery implement 10 of excision with these forceps 8 of the partition hold sections 12 is opened wide, and the piece S of excision currently grasped by the grasping forceps 7 is inserted in the interior of this partition hold section 12. Here, as for the partition hold section 12 made to hold first, it is desirable that it is what is located in a tip. That is, in case induction 11a of the partition hold section 12 is opened, it will pull to the actuation string 14 which made it insert in the insertion section 13, and the force will act, but since loop-formation-like extra length is ahead prepared from this latest

partition hold section 12, in case induction 11a is opened, a part for this extra length is drawn in smoothly and certainly by this actuation string 14. [0018] After excision of one inside-of-the-body tissue is completed as mentioned above, it is operated so that forceps 8 may open the 2nd hold partition section 12 from the latest partition hold section 12. While the actuation string 14 is drawn in from the latest partition hold section 12 by this and the latest partition hold section 12 will be in a closing condition mostly by it, this 2nd hold partition section 12 is opened. Then, if forceps 8 are taken out from the 1st treatment implement insertion channel 4 and the high frequency snare 6 is made to draw from the 1st treatment implement insertion channel 4 again, the inside-of-the-body tissue which excised in other partition hold sections 12 can be made to hold by coming out as it is, being able to excise new inside-of-the-body tissue, and performing the same actuation as the above-mentioned. Thus, in the piece recovery implement 10 of excision, excision of inside-of-the-body tissue and the hold to each partition hold section 12 of the piece S of excision can be repeatedly carried out, arranged the insertion section 1 of an endoscope in a coelome until the piece S of sequential excision is inserted in the prepared partition hold section 12 from a tip and the piece S of excision is held in all the partition hold sections 12.

[0019] If the piece S of excision is held in all the partition hold sections 12 that constitute the piece recovery implement 10 of excision, this piece recovery implement 10 of excision will be taken out from the inside of the body. For that, induction 11a of each partition hold section 12 must be closed completely first. It is because there is a possibility that the contents of the partition hold section 12 may carry out the extravasation from induction 11a when the piece recovery implement 10 of excision is taken out, after the condition that induction 11a was opened wide, or the actuation string 14 has loosened. For this reason, using forceps 8, it is operated so that the actuation string's 14 free end may be drawn in the 2nd treatment implement insertion channel 4. Consequently, the piece recovery implement 10 of excision tends to be drawn in the 2nd treatment implement insertion channel 4. However, this piece recovery implement 10 of excision is sufficiently larger than the bore of the 2nd treatment implement insertion channel 4, therefore is caught in a part for the open end of this 2nd treatment implement insertion channel 4, and is not drawn in the interior. Therefore, as the actuation string 14 wrings and it was shown in drawing 4, it can hold in the condition that induction 11a in the body 11 of a bag will contract, and induction 11a was closed, for example, the whole induction 11a of the body 11 of a bag was closed by the hemostasis clip 15 grade.

[0020] Then, two or more pieces S of excision held in each partition hold section 12 of the piece recovery implement 10 of excision are recoverable to coincidence by making the actuation string 14 grasp with forceps 8, and operating it so that the insertion section 1 may be drawn out out of a coelome. It **, and since it will be closed down by each partition hold section 12, it does not have a possibility that the organization which could prevent certainly that the piece S of excision which is the contents of each [these] partition hold section 12, its blood, etc. begin to leak, and did the lesion to healthy tissue etc. may adhere. And two or more pieces S of excision are held in the partition hold section 12 which became independent, respectively, since it is recoverable in the condition of having dissociated, after recovery, can be certainly divided for every excision part, and can conduct various inspection etc. Moreover, since it is not

necessary to insert [section / 1 / insertion] inside of the body for every one excision, smooth and quick inside-of-the-body tissue can be excised, and the increase in efficiency of treatment -- a patient's pain is sharply mitigable -- is attained.

[0021] by the way, from performing actuation of opening induction 11a of each partition hold section 12 in the piece recovery implement 10 of excision, in the gestalt of operation mentioned above using operating members for disconnection, such as forceps If are and it closes it made to open the excision recovery implement 10 by remote operation, it will become unnecessary to perform extraction and insertion to the treatment implement insertion channel of the RF snare 6 as a RF excision implement, although a RF excision implement and the forceps for switching operation must be exchanged and inserted for every one excision. For that, the piece recovery implement of excision can be constituted as shown in drawing 5 thru/or drawing 9 .

[0022] First, in drawing 5 and drawing 6 , 20 is a piece recovery implement of excision, partition formation is carried out at two or more partition hold sections 22 like the body 11 of a bag in the gestalt of the 1st operation mentioned above, and the body 21 of a bag which constitutes this piece recovery implement 20 of excision is carrying out opening of the 1 side of this body 21 of a bag, and this is set to induction 21a of the piece S of excision. And the insertion sections 23a and 23b are formed in the upper limit edge in which induction 21a in the body 21 of a bag was formed at right-and-left both sides. And the spring plate 24 divided every partition hold section 22, respectively is fixed and formed in one insertion section 23a. As shown in drawing 7 , peculiarity attachment of this spring plate 24 is carried out so that it may become a curve configuration, and it holds the condition of whether it curves in the direction shown in this drawing as the continuous line, or to curve in the direction shown by the imaginary line in always. And if the straight condition which showed with the alternate long and short dash line when external force was made to act in the direction of an arrow head to the spring plate 24 which is curving in the condition which showed as the continuous line serves as a lock position and crosses this lock position, it will be in the condition which showed with the two-dot chain line, and will be stabilized. As a closing motion operating member inserted in the insertion sections 23a and 23b, it is the fixed side rod part material 25 which has bend 25a which curves in the direction estranged from the other party's insertion section 23b every partition hold section 22 by the insertion section 23a side. On the other hand, in insertion section 23b of the side equipped with the spring plate 24 every partition hold section 22, the rod part material 26 for switching operation is inserted in. And one-place bend 26a is formed in a part for that point at this rod part material 26 for switching operation. And the fixed side rod part material 25 is changed into a fixed condition, and is inserted in the support cylinder 27, and the rod part material 26 for switching operation is inserted in the circumference of push length and a shaft rotatable to this support cylinder 27.

[0023] Each partition hold section 22 can be opened [if the piece recovery implement 20 of excision is used / switching operation of the induction 21a of each partition hold section 22 which constitutes this piece recovery implement 20 of excision can be carried out, and] and closed by remote operation by moreover operating the end face section of the rod part material 26 for switching operation by performing push length and rotation actuation to the circumference of a shaft for the rod part material 26 for switching operation to the support cylinder 27. That is, if bend 26a in the tip of the rod

part material 26 for switching operation is made to meet one bend 25a of the fixed side rod part material 25 inserted in the insertion section 23a side and bend 25a incurvates bend 26a to an opposite direction, induction 21a of the partition hold section 22 of this ** bend 26a to an opposite direction, induction 21a of the partition hold section 22 of this ** can open, and the piece S of excision can be inserted in the interior. And after the piece S of excision is held, when 180 degrees of rod part material 26 for switching operation are rotated, a spring plate 24 will curve to an opposite direction. And if it is operated so that the rod part material 26 for switching operation may be pulled back, and a spring plate 24 is changed into a free condition, a spring plate 24 will be stabilized in the condition of contacting mostly bend 25a of the fixed side rod part material 25.

Furthermore, in drawing 6, it is fixed to this support cylinder 27, and to the support cylinder 27, it can rotate to the circumference of a shaft, and the rod part material 26 for switching operation is 27 is a support cylinder in which the fixed side rod part material 25 and the rod part material 26 for switching operation are made to insert, and movable [the fixed side rod part material 25] in the direction of an axis.

[0024] Therefore, as shown in drawing 8, the rod part material 26 for switching operation is arranged in the condition of curving to an opposite direction in the location equivalent to the partition hold section 22 of the latest location in the body 21 of a bag, with the curve direction of bend 25a [in / for that bend 26a / this location of the fixed side rod part material 25]. By this, opening of the partition hold section 22 of the latest location will be carried out greatly, and it can insert the piece S of excision easily. By pulling back by die length of one place of the partition hold section 22, and rotating 180 more degrees, after the piece S of excision was held and rotating 180 degrees of rod part material 26 for switching operation It curves so that the spring plate 24 formed in the latest partition hold section 22 may project in convex towards the inside of bend 25a which is curving to the concave in the fixed side rod part material 25, as shown in drawing 9. This latest partition hold section 22 will be closed, and from a tip, when the spring plate 24 of the 2nd partition hold section 22 curves to an opposite direction to bend 25a of the fixed side rod part material 25, this 2nd partition hold section 22 will be opened. Furthermore, after rotating 180 degrees of rod part material 26 for switching operation once again and closing this 2nd partition hold section 22, sequential closing motion of the induction 21a of two or more partition hold sections 22 prepared in the body 21 of a bag can be carried out by operating it so that it may be pulled back by one pitch. In addition, in these drawing 8 and drawing 9, illustration of the body 21 of a bag is omitted and only the means for carrying out switching operation of the partition hold section 22 is shown.

[0025] What is necessary is here, just to make the curvature of a spring plate 24, and the curvature of bend 25a of the fixed side rod part material 25 almost the same, in order to change the partition hold section 22 of this ** into a sealing condition mostly, when induction 21a is closed. Moreover, in case the rod part material 26 for switching operation is pulled back from one insertion section 23b, in order to make it stabilized so that a spring plate 24 may not deform greatly, die length by the side of a tip is shortened from the bulge section to the maximum outside of the curve configuration.

[0026] It becomes unnecessary to make a means to open induction 21a of the partition hold section 22 insert in a treatment implement insertion channel by using this piece recovery implement 20 of excision. Therefore, while the high frequency snare 6 which excises this inside-of-the-body tissue for the grasping forceps 7 for grasping the inside-

of-the-body tissue which should excise from the 2nd treatment implement insertion channel 5 had been made to draw from the 1st treatment implement insertion channel 4, respectively, inside-of-the-body tissue is excised one after another, and that piece S of excision can be inserted into each partition hold section 22, and can be collected. Consequently, treatment which excises the polyp which are scattered in a coelome quickly and efficiently can be performed, and a burden can be remarkably mitigated in the pain of a way person and a patient.

[0027]

[Effect of the Invention] In case it can collect, inserting the insertion section of an endoscope in the inside of the body in excising inside-of-the-body tissues, such as a polyp, in a coelome since this invention was constituted as mentioned above where two or more pieces of excision are separated, respectively, and it takes out outside of the body, as the blood contained in this inside-of-the-body tissue and it does not adhere to other parts in a coelome, effectively recoverable effectiveness is done so.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the front view of the piece recovery implement of excision showing the gestalt of operation of the 1st of this invention.

[Drawing 2] It is the external view showing the condition of having involved in the actuation string applied part for the piece recovery implement of excision of drawing 1 as the heart.

[Drawing 3] It is the actuation explanatory view showing the condition of inserting the piece of excision in the piece recovery implement of excision used with the gestalt of the 1st operation.

[Drawing 4] It is the actuation explanatory view showing the condition of having closed the induction of the piece recovery implement of excision.

[Drawing 5] It is the front view of the piece recovery implement of excision showing the gestalt of operation of the 2nd of this invention.

[Drawing 6] It is the top view decomposing and showing each part which constitutes the piece recovery implement of excision of drawing 5.

[Drawing 7] It is the explanatory view showing the operating state of a spring plate.

[Drawing 8] It is the operation explanatory view showing the condition of having opened opening in the latest partition hold section of the piece recovery implement of excision by the gestalt of the 2nd operation.

[Drawing 9] It is the operation explanatory view showing the condition of having operated it so that the latest partition hold section might be closed from the condition of drawing 8 and opening of the 2nd partition hold section might be opened.

[Drawing 10] It is the external view showing a part for the point of the insertion section of an endoscope.

[Drawing 11] It is the operation explanatory view showing the condition of having excised the polyp in inside-of-the-body tissue.

[Description of Notations]

1 Insertion Section 4 1st Treatment Implement Insertion Channel
5 2nd Treatment Implement Insertion Channel 6 RF Snare
7 Grasping Forceps 8 Forceps
10 20 Piece recovery implement of excision 11 21 Body of a bag
11a, 21a Opening 12 22 Partition hold section
13a, 13b, 23a, 23b Insertion section 14 Actuation string
15 Clip 24 Spring Plate
25 Fixed Side Rod Part Material 26 Rod Part Material for Switching Operation
25a, 26a Bend

PATENT ABSTRACTS OF JAPAN

2002-011014

(11)Publication number :

(43)Date of publication of application : **15.01.2002**

(51)Int.CI. **A61B 17/22**

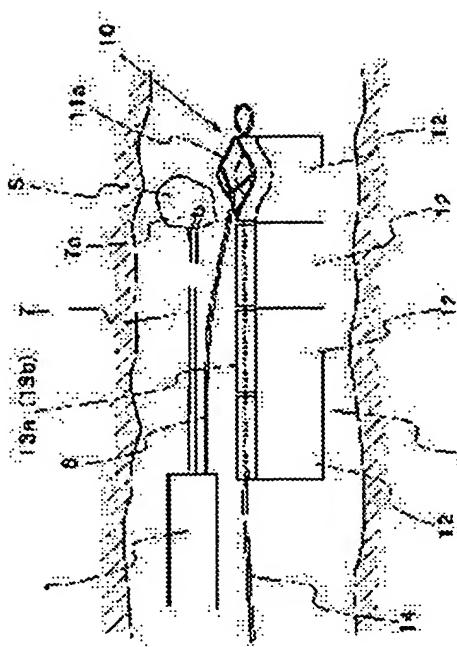
A61B 17/00

A61B 18/12

(21)Application number : **2000-195588** (71)Applicant : **FUJI PHOTO OPTICAL CO LTD**

(22)Date of filing : **29.06.2000** (72)Inventor : **ITOI HIROTOMO**

**(54) RESECTED TISSUE COLLECTING TOOL AND COLLECTING METHOD OF
THE SAME**



(57)Abstract:

PROBLEM TO BE SOLVED: To enable a resected tissue collecting tool to collect several pieces of resected tissues separately, when tissue like polyp is resected at somatic cavity, in the state that an insertion part of an endoscope is inserted in somatic cavity, and to effectively collect tissues by preventing tissue and blood contained in tissue from adhering to another part of somatic body.

SOLUTION: A sack main body 11 of the resected tissue collection tool 10 is separated in a plurality of container parts 12 independent with each other, and the resected tissue can be housed in each container part 12 from an introduction part 11a which is capable of opening and closing, and in order to keep the introduction part 11a in closed state, a tunnel-shaped insertion parts 13a, 13b are formed by turning up end parts of the sack main body 11 and adhering it to its side, and a drawstring 14 as an opening and closing member is inserted

inside the insertion parts 13a, 13b.

THIS PAGE BLANK (USPTO)